



# 20 MTPD Nitrosylsulfuric Acid Plant for Sale



## OVERVIEW

Shutdown: December 2017

Capacity: 20 mt/d solution (40% HNO<sub>5</sub>S in sulfuric acid)



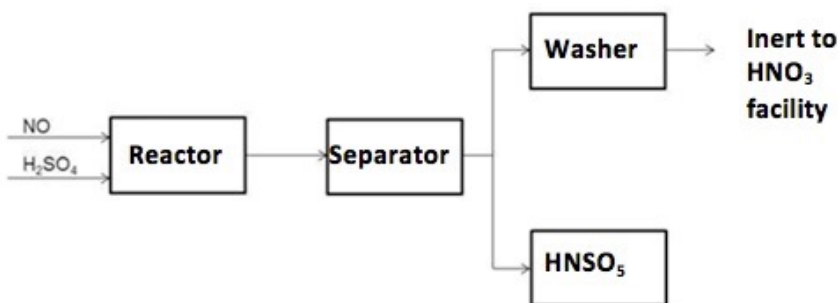
## Process Description

The plant for the production of nitrosylsulfuric acid (NOS) is integrated in the nitric acid plant. For the production of NOS nitrogen oxide gas and sulfuric acid are required. The nitrous gases NO, NO and dinitrogen trioxide N<sub>2</sub>O<sub>3</sub> are taken from the nitric acid process after the ammonia burners are fed to the NOS plant and mixed with sulphuric acid.

The product is a ca. 40% solution of nitrosylsulfuric acid in sulfuric acid. The capacity of the plant is ca. 20 t/d. The plant is well maintained and is controlled by a process control system.

The reaction takes place in a liquid ring pump. After this nitrosylsulfuric acid is separated from the unreacted Nix gases in a separator. The residual gas is washed with de-ionised water in a wash column and recycled to the nitric acid production. The ca. 40% nitrosylsulfuric acid from the separator is stored in two tanks. For the dispatch the nitrosylsulfuric acid is sampled and pumped into a shipping tank.

The NOS plant is housed in a container. The tank farm is heated to 40°C due to the high melting point of the nitrosylsulfuric acid solution.





## **Main Equipment**

The plant comprises the following main pieces of equipment (predominantly V4A):

- ELMO liquid ring compressor
- 12.5 m<sup>2</sup> double-tube heat exchanger
- Separator 1160 L
- Washing column
- 80m<sup>3</sup> sulfuric acid tank
- 3 vertical tanks (product tanks) 40m<sup>3</sup>, 40m<sup>3</sup> and 100m<sup>3</sup>
- Loading station

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